

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE TITLE

The title has been amended to more clearly indicate the nature of the invention to which the claims are directed, as required by the Examiner.

THE DRAWINGS

Figures 2 and 3 have been amended as per the Examiner's suggestion to add missing reference signs as per the disclosure in the specification. Specifically, Fig. 2 has been amended to show that the control block 11 implements the image output processing, and Fig. 3 has been amended to show that the image processing apparatus 10 limits an image area for determining an image processing condition according to the output image size which is within the image read by the image reading apparatus.

Submitted herewith are corrected sheets of formal drawing which incorporate the amendments and annotated sheets showing the changes made thereto.

No new matter has been added, and it is respectfully requested that the Examiner's objection to the drawings be withdrawn.

THE CLAIMS

Claims 1, 6 and 12 have been amended to clarify that, according to the present invention, at least one of gradation processing to control image contrast, frequency processing to control image sharpness, and dynamic range compression to narrow the image contrast is performed on the selected part of the two-dimensional image data based on the determined processing condition, as per the disclosure in the specification at, for example, page 11, line 22 to page 12, line 7.

In addition, claim 11 has been canceled and claim 12 has been amended to be put in proper "computer readable medium" form so as to comply with the requirements of 35 USC 101.

Still further, the claims have also been amended to make some minor grammatical improvements and to correct some minor antecedent basis problems so as to put them in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered and that the rejection under 35 USC 101 be withdrawn.

THE PRIOR ART REJECTION

Claims 1-12 have been rejected under 35 USC 102 as being anticipated by USP 7,031,506 ("Tsuji et al"). This rejection,

however, is respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as recited in independent claims 1, 6 and 12, an image composed of two-dimensional image data corresponding to an image reading area of an image reader is read, an output-size within the image reading area of the image reader is specified, a part of the two-dimensional image data that corresponds to the output-size is selected, the selected part of the two-dimensional image data is analyzed, and a processing condition for the selected part of the two-dimensional image data is determined based on the analysis. In addition, according to the present invention as recited in amended independent claims 1, 6 and 12, at least one of gradation processing to control image contrast, frequency processing to control image sharpness, and dynamic range compression to narrow the image contrast is performed on the selected part of the two-dimensional image data based on the determined processing condition.

That is, according to the present invention as recited in amended independent claims 1, 6 and 12, at least one of gradation processing to control image contrast, frequency processing to control image sharpness, and dynamic range compression to narrow the image contrast is performed based on an image processing condition which is determined by analyzing image data only corresponding to a limited processing area (as per the output

image size) which includes a region of interest (ROI). As a result, the image processing can performed more precisely since the effect of image data not corresponding to the limited processing area which includes the ROI (i.e., non-ROI image data) can be eliminated. As a result, a better quality ROI image can be obtained than in the case where the image processing condition is determined by analyzing image data corresponding to the entire image (including both the ROI and non-ROI) read by the image reading apparatus.

By contrast, Tsujii et al discloses a technique for identifying a region of interest (ROI) in advance for medical diagnosis. In Tsujii et al, a data stream (for example X-ray image data) is acquired and converted into a two-dimensional image before it is analyzed to determine a ROI. It is respectfully submitted, however, that after acquiring the determined ROI, Tsujii et al does not perform image processing to improve the image of the ROI in the manner of the present invention as recited in amended independent claims 1, 6 and 12.

With respect to various portions of Tsujii et al cited by the Examiner, it is noted that column 4, lines 65-67 merely discloses that the image processing apparatus thereof automatically determines effective regions for diagnosis, column 6, lines 40-50 merely discloses a flow operated by the image processing apparatus to detect shadow areas of tumors (and in

this step, the data stream is acquired), column 6, lines 54-55 merely discloses a step whereby the data stream is decoded into an image and analyzed to detect and output the disease location, column 6, lines 57-61 merely discloses a step of determining an area where further analysis is concentrated, and column 8, lines 3-26 merely discloses calculation methods of pathological parameters which are used to judge if an extracted shadow (extracted by filters having circular patterns - see column 7, line 52 to column 8, line 2) is positive or false positive.

It is respectfully submitted, however, that Tsujii et al does not at all disclose, teach or suggest that at least one of gradation processing to control image contrast, frequency processing to control image sharpness and dynamic range compression to narrow the image contrast is performed on a selected part of two-dimensional image data based on a determined processing condition, as according to the present invention as recited in amended independent claims 1, 6 and 12.

In addition, it is respectfully pointed out that since the object of Tsujii et al is to obtain a first portion of data to determine a ROI and to obtain a second portion of data based on the determined ROI, the problem solved by the claimed present invention (to efficiently obtain a better quality ROI image by performing image processing on the ROI image and by limiting an area used for determining an image processing condition) is not

encountered by Tsujii et al. Therefore, it follows that Tsujii et al does not achieve the advantages achieved by the claimed present invention.

Still further, it is respectfully submitted that the other cited references are no more pertinent.

Accordingly, it is respectfully submitted that the present invention as recited in amended independent claims 1, 6 and 12 and claims 2-5 and 7-10 respectively depending therefrom clearly patentably distinguishes over Tsujii et al, taken singly or in combination with any of the other prior art references of record, under 35 USC 102 and under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

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DH:rjl/jd
encs.

Image Output Processing implemented
by Control Block 11

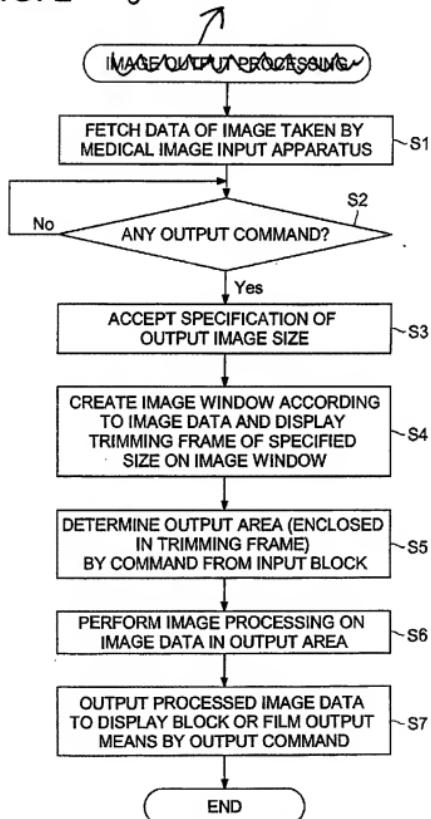
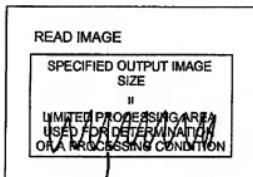


FIG. 3



Limited Processing Area limited by
the Image Processing Apparatus 10
for use in determination of a
Processing Condition